

## CLAIMS

What we claim is:

1. An SSB radio communication system comprising:

amplitude modulating a carrier wave in a transmitting side by using modulation pulse signals, wherein the modulation pulse signals comprise a constant amplitude, sine wave shaped reference pulse signal having a predetermined width and period, and sine wave shaped modulation pulse signals having the same width as the reference pulse signal and amplitudes representing two- or multi-value digital values based on the amplitude of the reference pulse signal,

transmitting the amplitude modulated signals on a single side band, and

automatically adjusting gains of received signals in a receiving side which are values of peaks of the received signals based on the reference pulse signal.

2. An SSB radio communication system of claim 1, characterized by the steps of

forming the period or frequency of said reference pulse signal in the transmitting side in synchronism with the carrier wave frequency, and

determining a local carrier wave frequency to be given to a demodulator in the receiving side, based on the period or frequency of said reference pulse signal.

3. A radio apparatus comprising:

a transmitting circuit for single side band communications, and means for generating modulation inputs, wherein said modulation inputs comprise a constant amplitude, sine wave shaped reference pulse signal having a predetermined width and period, and sine wave shaped modulation pulse signals having the same width as the reference pulse signal and amplitudes representing two- or multi-value digital values based on the amplitude of the reference pulse signal, wherein

said modulation inputs generated by the generating means are supplied to the transmitting circuit so as to amplitude modulate a carrier wave to transmit the amplitude modulated signals through a single side band.

4. A radio apparatus of claim 3, wherein said reference pulse signal is formed such that the reference pulse signal is provided with a predetermined width and a predetermined period based on said carrier wave frequency of the transmitting circuit.

5. A radio apparatus comprising:

an intermediate frequency amplifier for receiving communication signals carried on a single side band, and for automatically controlling the gain of the received signals,

a demodulator for demodulating the received signals based on a local carrier wave frequency, and

gain control means for automatically control the gain of said intermediate frequency amplifier such that a sine wave shaped reference pulse signal, which is contained in the output signals of said

intermediate frequency amplifier, and which has a predetermined width and a predetermined period, is peak detected so that its peak value becomes a predetermined value.

6. A radio apparatus of claim 5, wherein said reference pulse signal which is contained in the output signals of said intermediate frequency amplifier is peak detected to extract a row of constant period pulse signals, and wherein said local carrier wave frequency to be added to said demodulator is adjusted based on said row of constant period pulse signals.

7. A radio apparatus of claim 6, further comprising a low frequency amplifier disposed in the latter stage of said demodulator, wherein the gain of said low frequency amplifier is controlled by the automatic gain control means based on said reference pulse signal contained in the output signals of said low frequency amplifier.

8. A radio apparatus for receiving single side band communication signals modulated by modulation inputs, wherein said modulation inputs comprise a constant amplitude, sine wave shaped reference pulse signal, formed based on a carrier frequency, having a predetermined width and a predetermined period, and sine wave shaped modulation pulse signals having the same width as the reference pulse signal and amplitudes representing two- or multi-value digital values based on the amplitude of the reference pulse signal, the apparatus comprising,

an intermediate frequency amplifier for automatically control

the gain of the modulated signals,

a demodulator for demodulating the received signals,

automatic gain control means for peak detecting said reference pulse signal contained in the output signals of said intermediate frequency amplifier, and for controlling the gain of said intermediate frequency amplifier so that its peak value becomes a predetermined value, wherein

the output of said intermediate frequency amplifier is amplitude detected by a amplitude detector means to extract a frequency component of the predetermined period of said reference pulse signal, the frequency obtained based on the frequency obtained by said amplitude detector means is mixed with the frequency of the output signal of said intermediate frequency amplifier, and the frequency representing the sum or difference therebetween is fed to said demodulator as a local carrier frequency wave.

9. A radio apparatus of claim 8, further comprising a condenser having a charging/discharging circuit to control the gain of said intermediate frequency amplifier according to a charging voltage, wherein said discharging circuit of the condenser is switched on during a period when the amplitude of said reference pulse signal increases, and switched off during at least a period of the modulation pulse signal.